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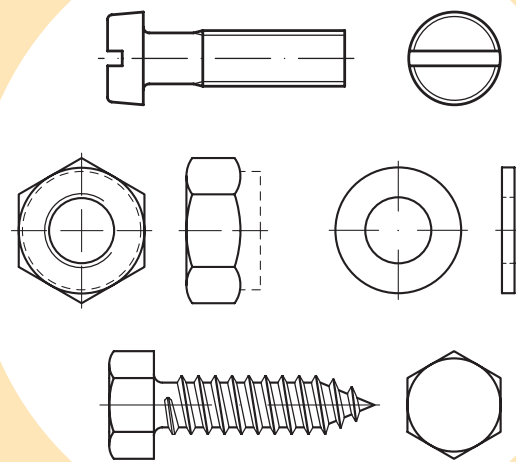
22769 Hamburg

Germany

CONVERSION IN STANDARDS DIN → EN AND ISO

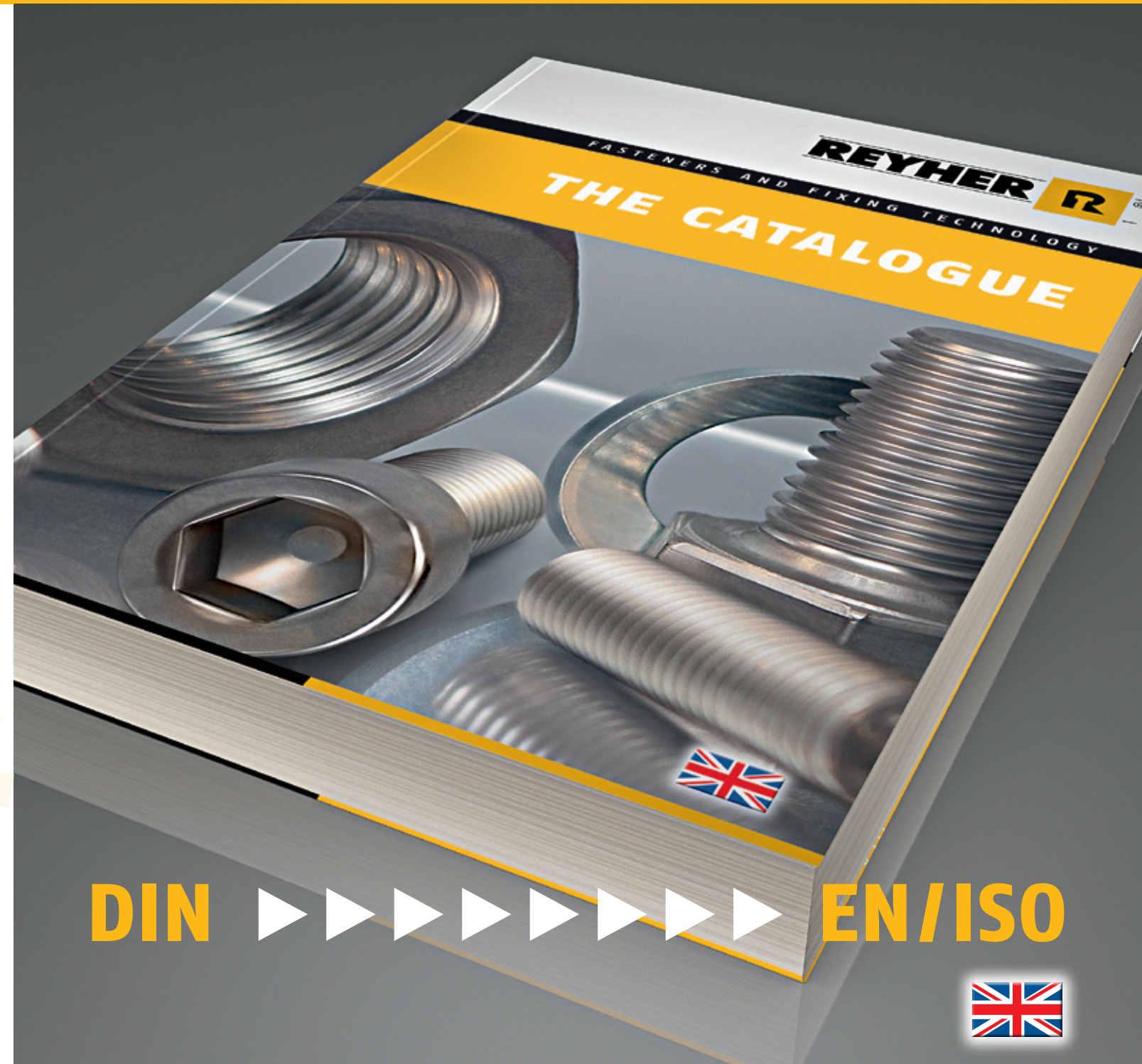
Fasteners in catalogue

DIN



EN/ISO

F4/EN12/0415



DIN



EN/ISO





■ Standards types and relations

DIN

National German standard (Deutsches Institut für Normung). DIN standards shall still be given for the products/services, for which there are no EN/ISO standards and no standardisation necessity.

ISO

International Standard (International Organization for Standardization).

DIN ISO

National German issue of an unmodified, adopted ISO standard.

EN

European Norm (CEN = Comité Européen de Normalisation) In general, existing ISO standards should be adopted as EN standards with the ISO standard number -> EN ISO. If this does not happen at European standards level, independent EN standards shall be generated with EN standard numbers which are different to those of the ISO.

DIN EN

National German issue of an unmodified, adopted EN standard. According to the resolution of the European Council, EN standards are to be adopted unmodified immediately by the EU member states and the corresponding national standards are to be withdrawn.

EN ISO

European standard issue which was adopted unmodified by ISO (EN and ISO standard numbers are identical – the earlier practice of “ISO number + 20,000” has not been in use since January 95. Standards still in use according to this mode are to be converted accordingly). The description is carried out according to ISO.

DIN EN ISO

National German issue of an unchanged EN standard adopted by ISO. The article naming is done according to ISO.

■ Conversion from DIN to EN/ISO standards – an investment in the future

Changing some of the national DIN standards to EN or ISO standards will remove trading obstacles in international goods flows as well as harmonizing technical rules.

The directives in the international ISO standards, as well as the European EN standards, also standardize fasteners. Due to worldwide or European-wide defined dimensions and types, for example screws and nuts will be interchangeable. For many business divisions in companies this provides a new opportunity to optimise processes.

Especially companies working worldwide or exporting, benefit from the change to ISO standards for their fasteners. The same wrench sizes and heights play an important role in production and procurement. ISO standards will make many things easier. In procurement the many national standards need not be taken into account. In production the ISO standards can be used worldwide to provide the same fasteners and tools for manufacturing.

■ DIN and EN/ISO standards in the REYHER catalogue

To be ready today, for the needs of tomorrow the REYHER catalogue is ISO oriented. With a range of 80,000 items available for delivery the catalogue is structured in product groups with an extra coloured register, to make finding the right items easier.

The switch from DIN to EN and ISO standards brings some changes with it. On the following pages we give you a comprehensive overview of the items affected in the REYHER catalogue. At a glance you can find the changes for DIN/EN/ISO screws, nuts, washers as well as bolts, split pins and pins.



■ Technical competence



Our experienced engineers and technicians in the REM – REYHER Engineering Management team handle all technical matters and details concerning fasteners and fixing technology. Our technical expertise is always cutting-edge. This benefits our customers, who we are happy to consult with at any time and instruct in our training sessions.




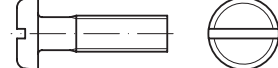
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Content

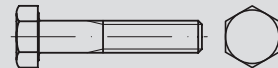


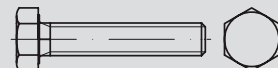
Page	2	Standards types and relations
Page	3	Information on changes to standards Standards changes in the REYHER catalogue Technical competence Content
Overview of changes for DIN → EN/ISO in the REYHER catalogue:		
Page	4 – 9	Screws/bolts
Page	10 – 13	Nuts
Page	14 – 15	Washers
Page	16 – 19	Bolts, split pins, pins
Page	19	Glossary abbreviations

Product illustrations	DIN	ISO	Designations	Material/ property classes	Coatings	Catalogue items		Standards conversion DIN → ISO
						DIN	ISO	

	84	1207	Slotted cheese head screws	4.8	ZP, YZP, NP	x	x	no significant changes
				A 1, A 2, A 4		x	x	
				Br	turned, Ni	x	x	

	85	1580	Slotted pan head screws	4.8	ZP	x	x	no significant changes
				A 2, A 4		x	x	
				Br		x	x	

	912	4762	Hexagon socket head cap screws, coarse pitch thread	8.8	ZP, ZP TLP, YZP, flZn	x	x	no changes
				10.9	ZP, flZn	x	x	
				12.9	flZn	x	x	
				A 2 - 70, A 4 - 70, A 4 - 80		x	x	
				A 4 BUMAX 88 (~ 8.8), A 4 BUMAX 109 (~ 10.9)			x	
		12474	Hexagon socket head cap screws, metric fine pitch thread	8.8, 12.9		x	x	
	912 ISR	14579	Hexalobular socket head cap screws (~ TORX)	8.8	ZP	x	x	

	931	4014	Hexagon head bolts with shank	5.6 (AD W7)	ZP, HDG			x
				1.7218 + QT (DGRL)	ZP			x
				8.8	ZP, ZP TLP, YZP, HDG	x	x	
				8.8/10.9	flZn			x
				10.9	ZP	x	x	
	933	4017	Hexagon head screws with thread up to head	A 2 - 70, A 4 - 70, A 4 - 80, A 5 (1.4571)		x	x	
				A 4 BUMAX 88 (~ 8,8), A 4 BUMAX 109 (~ 10,9)				x
				Br		x	x	
	960	8765	Hexagon head bolts with shank, metric fine pitch thread	8.8	ZP	x	x	
				10.9	ZP	x	x	
	961	8676	Hexagon head screws with thread up to head, metric fine pitch thread	8.8	ZP	x	x	
				10.9	ZP	x	x	



no significant changes

no significant changes

no changes

■ Wrench sizes have changed in the following dimensions:

Dimensions	DIN WS	ISO WS
M 10	17	16
M 12	19	18
M 14	22	21
M 22	32	34
Others	no changes	

Information: Listed in DIN standard order.
The glossary for abbreviations of materials and coatings is on page 19.

Product illustrations	DIN	ISO	Designations	Material/ property classes	Coatings	Catalogue items		Standards conversion DIN → ISO
						DIN	ISO	

	963	2009	Slotted countersunk head screws		turned	x	x
				4.8	ZP, YZP	x	x
				A 1, A 2, A 4		x	x
	964	2010	Slotted raised countersunk head screws	4.8	ZP	x	x
				A 2, A 4		x	x
	965	7046-1, 7046-2	Countersunk head screws with cross recess	4.8	ZP	x	x
				A 2, A 4		x	x
	966	7047	Raised countersunk head screws with cross recess	4.8	ZP	x	x
				A 2, A 4		x	x



■ Head heights (h) and head diameters (∅) have changed from the dimension M 3 as follows:

Dimensions	max head heights h		max head diameters ∅	
	DIN	ISO	DIN	ISO
M 3	1.65	1.65	5.6	5.5
M 3.5	1.93	2.35	6.5	7.3
M 4	2.2	2.7	7.5	8.4
M 5	2.5	2.7	9.2	9.3
M 6	3	3.3	11	11.3
M 8	4	4.65	14.5	15.8
M 10	5	5	18	18.3

	7976	1479	Hexagon head tapping screws	St	ZP	x	x
--	------	------	-----------------------------	----	----	---	---



■ Dimension ST 3.9 is omitted in the ISO standard
 ■ Head heights (h) have changed minimally (no need to change product):

Dimensions	max head heights h	
	DIN	ISO
ST 2.2	1.42	1.6
ST 2.9	1.62	2.3
ST 3.5	2.42	2.6
ST 3.9	2.42	-
ST 4.2	2.92	3
ST 4.8	3.12	3.8
ST 5.5	4.15	4.1
ST 6.3	4.95	4.7
ST 8	5.95	6
ST 9.5	-	7.5

	7981	7049	Pan head tapping screws with cross recess	St	ZP	x	x
				A 2, A 4		x	x
	~ 7981	14585	Pan head tapping screws with hexalobular socket (~ TORX)	St	ZP	x	x
				A 2		x	x



no significant changes

	7982	7050	Countersunk head tapping screws with cross	St	ZP	x	x
				A 2, A 4		x	x
	~ 7982	14586	Countersunk head tapping screws with hexalobular socket (~ TORX)	St	ZP	x	x
				A 2		x	x
	7983	7051	Raised countersunk head tapping screws with cross recess	St	ZP	x	x
				A 2		x	x


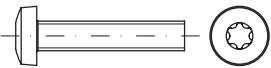



■ Changed countersunk: DIN 80° / ISO 90°
 ■ Dimension ST 3.9 is omitted in the ISO standard
 ■ Head heights (h) and head diameters (∅) have changed as follows:

Dimensions	max head heights h		max head diameters ∅	
	DIN	ISO	DIN	ISO
ST 2.2	1.3	1.1	4.3	3.8
ST 2.9	1.7	1.7	5.5	5.5
ST 3.5	2.1	2.35	6.8	7.3
ST 3.9	2.3	-	7.5	-
ST 4.2	2.5	2.6	8.1	8.4
ST 4.8	3	2.8	9.5	9.3
ST 5.5	3.4	3	10.8	10.3
ST 6.3	3.8	3.15	12.4	11.3

Information: Listed in DIN standard order.
 The glossary for abbreviations of materials and coatings is on page 19.

Product illustrations	DIN	ISO	Designations	Material/ property classes	Coatings	Catalogue items		Standards conversion DIN → ISO
						DIN	ISO	

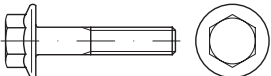
	7985	7045	Pan head screws with cross recess	4.8	ZP, ZP TLP, YZP	x	x	no significant changes
	~ 7985	14583	Cheese head screws with hexalobular socket (~ TORX)	4.8	ZP	x	x	
				A 2		x	x	

	7991	10642	Hexagon socket countersunk head screws	8.8	ZP, ZP TLP, YZP		x	no significant changes
				10.9	ZP		x	

■ Dimensions M 22 and M 24 are omitted in ISO standards
Information: These dimensions are available at REYHER as DIN standards.
 ■ In the other dimensions the head heights (k), head diameters (d_h) and thread lengths (b) have changed as follows:

Dimensions	max head heights (k)		max head diameters (d _h)		thread lengths (b)	
	DIN	ISO	DIN	ISO	DIN	ISO
M 3	1.7	1.86	6	6.72	12	18
M 4	2.3	2.48	8	8.96	14	20
M 5	2.8	3.1	10	10.2	16	22
M 6	3.3	3.72	12	13.44	18	24
M 8	4.4	4.96	16	17.92	22	28
M 10	5.5	6.2	20	22.4	26	32
M 12	6.5	7.44	24	26.8	30	36
M 14	7	8.4	27	30.88	34	40
M 16	7.5	8.8	30	33.6	38	44
M 20	8.5	10.16	36	40.32	46	52
M 22	13.1	13.1	36	36	50	56
M 24	14	14	39	39	54	60

Product illustrations	DIN	EN	Designations	Material/ property classes	Coatings	Catalogue items		Standards conversion DIN → EN
						DIN	EN	

	6921	1665	Hexagon flange bolts	8.8	ZP	x	x	no significant changes
				10.9	ZP	x	x	

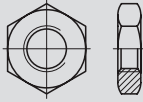
■ Property class 12.9 is omitted in the EN standard
 ■ Wrench sizes (WS) from dimension M 10 and head heights (h) have changed as follows:

Dimensions	Wrench sizes (WS)		max head heights h	
	DIN	EN	DIN	EN
M 5	8	8	5,4	5,8
M 6	10	10	6,6	6,6
M 8	13	13	8,1	8,1
M 10	15	16	9,2	10,4
M 12	16	18	11,5	11,8
M 16	21	24	14,4	15,4

Information: Listed in DIN standard order.
The glossary for abbreviations of materials and coatings is on page 19.

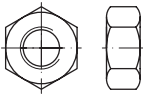
Product illustrations	DIN	ISO	Designations	Material/ property classes	Coatings	Catalogue items	
						DIN	ISO

Standards conversion DIN → ISO

	439-2	4035	Hexagon thin nuts, coarse pitch thread, chamfered	04	ZP, ZP TLP, YZP, flZn, HDG	x	x
				05	ZP		x
				A 2, A 4		x	x
		8675	Hexagon thin nuts, metric fine pitch thread, chamfered	04	ZP	x	x
				05	ZP		x
				A 2, A 4		x	x

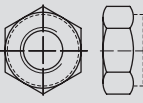
■ Wrench sizes (WS) have changed in the following dimensions:

Dimensions Ø	DIN WS	ISO WS
M 10	17	16
M 12	19	18
M 14	22	21
M 22	32	34
Others	no changes	

	934	4032	Hexagon nuts, coarse pitch thread	1.7218 + QT (DGRL)	ZP	x	x				
				5-2 (AD W7)	ZP, YZP, HDG		x				
				C 35			x				
				6 AU		x	x				
				8	ZP, ZP TLP, YZP, HDG, NP	x	x				
				8	flZn		x				
				10	ZP	x	x				
				10	ZP TLP, flZn, HDG		x				
				A 1, A 2, A 2 - 70, A 4, A 4 - 70, A 4 - 80, A 5 (1.4571)		x	x				
				A 4 BUMAX 88 (~ FK 8), A 4 BUMAX 109 (~ FK 10)			x				
				Br	NP, Cr	x	x				
				CuNiSi, Al, Ti		x	x				
				4033	Hexagon nuts, coarse pitch thread	12		x	x		
						8673	Hexagon nuts, metric fine pitch thread	6 AU		x	x
								8	ZP, black	x	x
10	ZP	x	x								
A 2		x	x								
Br		x	x								

■ Wrench sizes (WS) and/or nut heights (m) have changed in the following dimensions:

Dimensions Ø	Wrench sizes WS		Nut heights m	
	DIN WS	ISO WS	DIN m	ISO m
M 5	8	8	4	4.7
M 6	10	10	5	5.2
M 8	13	13	6.8	6.5
M 10	17	16	8	8.4
M 12	19	18	10	10.8
M 14	22	21	11	12.8
M 16	24	24	13	14.8
M 18	27	27	15	15.8
M 20	30	30	16	18
M 22	32	34	18	19.4
M 24	36	36	19	21.5
M 27	41	41	22	23.8
M 30	46	46	24	25.6
M 33	50	50	26	28.7
M 36	55	55	29	31
M 39	60	60	31	33.4
Others	no changes			

	980/ 6925	7042	Prevailing torque type hexagon nuts, all-metal, coarse pitch thread	8	ZP, YZP, flZn, HDG	x	x
				10	ZP, flZn	x	x
				A 2, A 4*		x	x
		10513	Prevailing torque type hexagon nuts, all-metal, metric fine pitch thread	8	ZP	x	x
				10	ZP	x	x

■ Wrench sizes (WS), nut heights (m) and wrenching heights (m'/m_w) have changed in the following dimensions:

Dimensions Ø	Wrench sizes WS		Nut heights m		Wrenching heights m'/m _w	
	DIN 980	DIN 6925** ISO 7042 ISO 10513	DIN 980 / DIN 6925	ISO 7042 / 10513	DIN 980 / DIN 6925	ISO 7042 / ISO 10513
M 4	7	-	4.2	-	2.2	-
M 5	8	8	5.1	5.1	2.75	3.52
M 6	10	10	6	6	3.3	3.92
M 7	11	-	7	-	3.85	-
M 8	13	13	8	8	4.4	5.15
M 10	17	16	10	10	5.5	6.43
M 12	19	18	12	12	6.6	8.3
M 14	22	21	14	14.1	7.7	9.68
M 16	24	24	16	16.4	8.8	11.28
M 18	27	-	18	-	9.9	-
M 20	30	30	20	20.3	11	13.52
M 22	32	-	22	-	12.2	-
M 24	36	36	24	23.9	13.2	16.16
M 27	41	-	27	-	14.8	-
M 30	46	46	30	30	16.5	19.44
M 33	50	-	33	-	18.2	-
M 36	55	55	36	36.1	19.8	23.52
Others	no changes					

* Non-standardized product and functional characteristics.

Information: Listed in DIN standard order.
The glossary for abbreviations of materials and coatings is on page 19.

** Information:
DIN 6925 already
contains the wrench
sizes of ISO

Product illustrations | DIN | ISO | Designations | Material/property classes | Coatings | Catalogue items DIN | ISO | Standards conversion DIN → ISO

	982/ 6924	7040	Prevailing torque type hexagon nuts, non-metallic insert, coarse pitch thread	8	ZP	x	x
				10	ZP	x	x
				A 2, A 4*		x	x
		10512	Prevailing torque type hexagon nuts, non-metallic insert, metric fine pitch thread	10	ZP	x	x
				A 2, A 4*		x	



■ Nut heights have a larger tolerance area
 ■ Wrench sizes (WS) and/or nut heights (m) have changed in the following dimensions:

Dimensions Ø	Wrench sizes WS		Nut heights m		
	DIN 982	DIN 6924** ISO 7040 ISO 10513	DIN 982	DIN 6924	ISO 7040 ISO 10512
M 4	–	7	–	6	6
M 5	8	8	6.3	6.8	6.8
M 7	11	only DIN 6924: 11	8.5	9	–
M 10	17	16	11.5	11.9	11.9
M 12	19	18	14	14.9	14.9
M 14	22	21	16	17	17
M 16	24	24	18	19.1	19.1
M 18	27	only DIN 6924: 27	20	20.6	–
M 20	30	30	22	22.8	22.8
M 22	32	34	25	24.5	–
M 24	36	36	28	27.1	27.1
M 27	–	only DIN 6924: 41	–	31	–
M 30	–	46	–	32.6	32.6
M 33	–	only DIN 6924: 50	–	35.5	–
M 36	–	55	–	38.9	38.9
Others			no changes		

** Information:
DIN 6924 already contains the wrench sizes of ISO

	985	10511	Prevailing torque type hexagon nuts, non-metallic insert	DIN: 8 -> ISO: 04	ZP, ZP TLP, YZP, flZn	x	x
				8	flZn	x	
				DIN: 10 -> ISO: 05	ZP	x	x
				A 2, A 4*			x
				Br*		x	x



■ Wrench sizes (WS) and/or nut heights (m) have changed in the following dimensions:

Dimensions Ø	Wrench sizes WS		Nut heights m	
	DIN SW	ISO SW	DIN m	ISO m
M 3	5.5	5.5	4	3.9
M 7	11	–	7.5	–
M 8	13	13	8	6.76
M 10	17	16	10	8.56
M 12	19	18	12	10.23
M 14	22	21	14	11.32
M 16	24	24	16	12.42
M 18	27	–	18.5	–
M 20	30	30	20	14.9
M 22	32	34	22	?
M 24	36	36	24	17.8
M 27	41	–	27	–
M 30	46	46	30	22.2
M 33	50	–	33	–
M 36	55	55	36	25.5
M 39	60	–	39	–
M 42	65	–	42	–
M 45	70	–	45	–
M 48	75	–	48	–
Others			no changes	

* Non-standardized product and functional characteristics.

Product illustrations | DIN | EN | Designations | Material/property classes | Coatings | Catalogue items DIN | EN | Standards conversion DIN → EN

	6923	1661	Hexagon nuts with flange	8	ZP	x	x
				A 2, A 4		x	x
	6926	1663	Prevailing torque type hexagon nuts with flange, non-metallic insert, coarse pitch thread	8	ZP		x
	6927	1664	Prevailing torque type hexagon nuts with flange, all-metal, coarse pitch thread	8	ZP		x



■ Wrench sizes (WS) have changed in the following dimensions:

Dimensions Ø	Wrench sizes WS	
	DIN	EN
M 10	15	16
Others	no changes	

Information: Listed in DIN standard order.
The glossary for abbreviations of materials and coatings is on page 19.

Product illustrations	DIN	ISO	Designations	Material/ property classes	Coatings	Catalogue items		Standards conversion DIN → ISO
						DIN	ISO	

	125-1 type A	7089	Plain washers, normal series, without chamfer, product grade A	DIN: 140 HV → ISO: 200 HV	ZP, YZP, HDG, NP	x	x	<ul style="list-style-type: none"> Changed hardness classes: DIN 140 HV / ISO 200 HV Diameters (d_i) have changed in the following dimensions (∅): <table border="1"> <thead> <tr> <th rowspan="2">Dimensions ∅</th> <th colspan="2">Diameters d_i</th> </tr> <tr> <th>DIN</th> <th>ISO</th> </tr> </thead> <tbody> <tr><td>M 39</td><td>40</td><td>42</td></tr> <tr><td>M 42</td><td>43</td><td>45</td></tr> <tr><td>M 45</td><td>46</td><td>48</td></tr> <tr><td>M 48</td><td>50</td><td>52</td></tr> <tr><td>M 52</td><td>54</td><td>56</td></tr> <tr><td>M 56</td><td>58</td><td>62</td></tr> <tr><td>M 60</td><td>62</td><td>66</td></tr> <tr><td>M 64</td><td>66</td><td>70</td></tr> <tr><td>M 68</td><td>70</td><td>74</td></tr> <tr><td>M 72</td><td>74</td><td>78</td></tr> <tr><td>M 76</td><td>78</td><td>82</td></tr> <tr><td>M 80</td><td>82</td><td>86</td></tr> <tr><td>M 90</td><td>93</td><td>96</td></tr> <tr><td>Others</td><td colspan="2">no changes</td></tr> </tbody> </table>	Dimensions ∅	Diameters d _i		DIN	ISO	M 39	40	42	M 42	43	45	M 45	46	48	M 48	50	52	M 52	54	56	M 56	58	62	M 60	62	66	M 64	66	70	M 68	70	74	M 72	74	78	M 76	78	82	M 80	82	86	M 90	93	96	Others	no changes	
				Dimensions ∅	Diameters d _i																																																		
					DIN	ISO																																																	
				M 39	40	42																																																	
				M 42	43	45																																																	
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M 72	74	78																																																					
M 76	78	82																																																					
M 80	82	86																																																					
M 90	93	96																																																					
Others	no changes																																																						
HV 300	ZP, YZP, HDG		x																																																				
DIN: A 2 140 HV → ISO: A 2 200 HV, DIN: A 4 140 HV → ISO: A 4 200 HV, DIN: A 5 140 HV → ISO: A 5 200 HV		x	x																																																				
A 4 BUMAX 88 200 HV, A 4 BUMAX 109 300 HV			x																																																				
Br	Ni, Cr	x	x																																																				
Cu, Al		x	x																																																				
	125-1 type A	7090	Plain washers, normal series, with chamfer, product grade A	DIN: 140 HV → ISO: 200 HV	turned, ZP, ZP, TLP, ZP black, HDG	x	x	<ul style="list-style-type: none"> Changed hardness classes: DIN 140 HV / ISO 200 HV Diameters (d_i) have changed in the following dimensions (∅): <table border="1"> <thead> <tr> <th rowspan="2">Dimensions ∅</th> <th colspan="2">Diameters d_i</th> </tr> <tr> <th>DIN</th> <th>ISO</th> </tr> </thead> <tbody> <tr><td>M 39</td><td>40</td><td>42</td></tr> <tr><td>M 42</td><td>43</td><td>45</td></tr> <tr><td>M 45</td><td>46</td><td>48</td></tr> <tr><td>M 48</td><td>50</td><td>52</td></tr> <tr><td>M 52</td><td>54</td><td>56</td></tr> <tr><td>M 56</td><td>58</td><td>62</td></tr> <tr><td>M 60</td><td>62</td><td>66</td></tr> <tr><td>M 64</td><td>66</td><td>70</td></tr> <tr><td>M 68</td><td>70</td><td>74</td></tr> <tr><td>M 72</td><td>74</td><td>78</td></tr> <tr><td>M 76</td><td>78</td><td>82</td></tr> <tr><td>M 80</td><td>82</td><td>86</td></tr> <tr><td>M 90</td><td>93</td><td>96</td></tr> <tr><td>Others</td><td colspan="2">no changes</td></tr> </tbody> </table>	Dimensions ∅	Diameters d _i		DIN	ISO	M 39	40	42	M 42	43	45	M 45	46	48	M 48	50	52	M 52	54	56	M 56	58	62	M 60	62	66	M 64	66	70	M 68	70	74	M 72	74	78	M 76	78	82	M 80	82	86	M 90	93	96	Others	no changes	
				Dimensions ∅	Diameters d _i																																																		
					DIN	ISO																																																	
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				M 42	43	45																																																	
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M 52	54	56																																																					
M 56	58	62																																																					
M 60	62	66																																																					
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M 68	70	74																																																					
M 72	74	78																																																					
M 76	78	82																																																					
M 80	82	86																																																					
M 90	93	96																																																					
Others	no changes																																																						
200 HV	HDG		x																																																				
300 HV	HDG		x																																																				
DIN: A 2 140 HV → ISO: A 2 200 HV, DIN: A 4 140 HV → ISO: A 4 200 HV, DIN: A 5 140 HV → ISO: A 5 200 HV		x	x																																																				
Br		x	x																																																				

	126 type C	7091	Plain washers, normal series, product grade C	100 HV	ZP	x	x	Some dimensions have changed minimally - no need to change product
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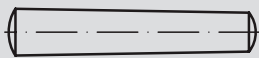
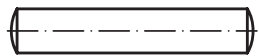
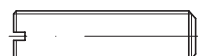
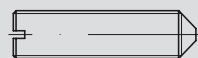
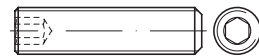
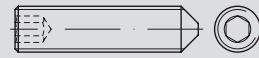
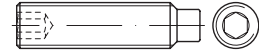
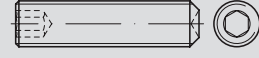
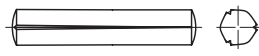
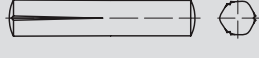



	433 type A	7092	Plain washers, small series, product grade A	DIN: 140 HV → ISO: 200 HV	ZP	x	x	<ul style="list-style-type: none"> Changed hardness classes: DIN 140 HV / ISO 200 HV
				DIN: A 2 140 HV → ISO: A 2 200 HV, DIN: A 4 140 HV → ISO: A 4 200 HV		x	x	
				Br		x	x	

	440 type C	7094	Plain washers, extra large series, product grade C	100 HV	ZP, HDG	x	x	no changes
				A 2, A 4		x	x	

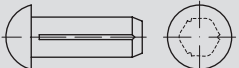
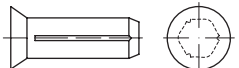
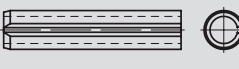
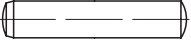
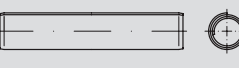
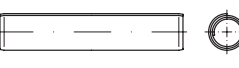
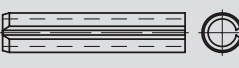
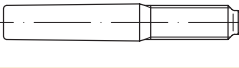
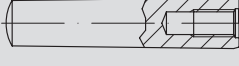
	1440 type A	8738	Washers for clevis pins, product grade A	St	ZP, YZP	x	x	Outer diameters and thicknesses have changed minimally - no need to change product
				A 2, A 4		x	x	

	9021 type A	7093-1	Plain washers, large series, product grade A	DIN: 140/100 HV → ISO: 200 HV	ZP, YZP, HDG	x	x	<ul style="list-style-type: none"> Changed hardness classes: DIN 140 HV / ISO 200 HV
				DIN: A 2 140/100 HV → ISO: A 2 200 HV, DIN: A 4 140/100 HV → ISO: A 4 200 HV		x	x	
				A 5 200 HV			x	
				Br		x	x	

Information: Listed in DIN standard order.
The glossary for abbreviations of materials and coatings is on page 19.

Product illustrations	DIN	ISO	Designations	Material/ property classes	Coatings	Catalogue items		Standards conversion DIN → ISO
						DIN	ISO	
	1	2339	Taper pins	St, A 1		x	x	<ul style="list-style-type: none"> ■ Changed length calculation: ISO incl. round end / DIN excl. round end
	7	2338	Parallel pins	St, A 1, A 4		x	x	<ul style="list-style-type: none"> ■ Type A now with tolerance m6 in accordance with the ISO standard ■ Changed length calculation: ISO incl. round end / DIN excl. round end
	94	1234	Split pins	St	ZP	x	x	no significant changes
				A 2, A 4, Br, Cu		x	x	
	551	4766	Slotted grub screws with flat point	14 H	ZP	x	x	no significant changes
				A 1, A 4, Br		x	x	
	553	7434	Slotted grub screws with cone point	14 H, A 1, A 4, Br		x	x	
	913	4026	Hexagon socket set screws with flat point	45 H	ZP	x	x	
				A 1/A 2, A 4		x	x	
	914	4027	Hexagon socket set screws with cone point	45 H	ZP	x	x	
				A 1/A 2, A 4		x	x	
	915	4028	Hexagon socket set screws with full dog point	45 H	ZP	x	x	
				A 1/A 2, A 4		x	x	
	916	4029	Hexagon socket set screws with cup point	45 H	ZP	x	x	
				A 1/A 2, A 4		x	x	
	1471	8744	Grooved pins, full-length taper grooved	St, A 1		x	x	<ul style="list-style-type: none"> ■ Changed length calculation: ISO incl. round end / DIN excl. round end
	1472	8745	Grooved pins, half length taper grooved	St, A 1		x	x	
	1473	8740	Grooved pins, full length parallel grooved	St, A 1		x	x	
	1474	8741	Grooved pins, half length reverse grooved	St		x	x	
	1475	8742	Grooved pins, third length centre grooved	St		x	x	

Information: Listed in DIN standard order.
The glossary for abbreviations of materials and coatings is on page 19.

Product illustrations	DIN	ISO	Designations	Material/ property classes	Coatings	Catalogue items		Standards conversion DIN → ISO	
						DIN	ISO		
	1476	8746	Grooved pins with round head	St		x	x	<ul style="list-style-type: none"> ■ Type A = no significant changes ■ Standard ISO: type B additional with pilot end 	
				A 2, Br, Al		x	x		
	1477	8747	Grooved pins with countersunk head	St		x	x		
	1481	8752	Spring type straight pins, heavy duty	Spring St		x	x	<ul style="list-style-type: none"> ■ Type A = ISO regular finish to $\varnothing \leq 8$ mm with 2 chamfers / DIN previously to $\varnothing \leq 6$ mm ■ Standard ISO: type B additionally non-interlocking 	
				Spring St	ZP				x
				1.4310		x	x		
	6325	8734	Parallel pins	St	hardened	x	x	<ul style="list-style-type: none"> ■ Standard ISO: type A with chamfer/round end, fully hardened ■ Standard ISO: type B with chamfer, case hardened 	
	7343	8750	Spring-type straight pins, coiled, standard duty	Spring St		x	x		
				1.4310		x	x		
	7344	8748	Spring-type straight pins, coiled, heavy duty	Spring St		x	x	no significant changes	
	7346	13337	Taper pins with internal thread	Spring St		x	x		
	7977	8737	Taper pins with external thread, constant threaded part	St		x	x	no significant changes	
	7978	8736	Taper pins with internal thread	St		x	x		

Glossary abbreviations materials and coatings

A 1-A 5	Stainless steel
Al	Aluminium
Br	Brass
Cr	Chrome
Cu	Copper
CuNiSi	Copper alloy
flZn	Zinc flake coating
HDG	Hot dip galvanized
Ni	Nickel
NP	Nickel plated
QT	Quenched and tempered
St	Steel
Ti	Titanium
YZP	Yellow zinc plated
ZP	Zinc plated
ZP TLP	Zinc plated thickness layer passivation
4.6-12.9	Property classes for bolts and screws
5-12 / 04, 05	Property classes for nuts
11 H - 45 H	Hardness classification